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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,238	06/09/2006	Daisuke Kanenari	21713-00031-US1	1668
30678 7590 07/20/2009 CONNOLLY BOVE LODGE & HUTZ LLP 1875 EYE STREET, N.W. SUITE 1100 WASHINGTON, DC 20006				
EXAMINER				
BUIE, NICOLE M				
ART UNIT		PAPER NUMBER		
1796				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/582,238

**Applicant(s)**

KANENARI ET AL.

**Examiner**

NICOLE M. BUJE

**Art Unit**

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 7, 14, 22 and 27-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-18, 20, and 22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI-08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

### ***Response to Amendment***

The amendment filed 06/26/2009 has been entered. Claims 1-29 remain pending in the application. Claims 7, 14, 22, and 27-29 were previously withdrawn.

The indicated allowability of claims 15-21 is withdrawn in view of the newly discovered reference(s) to Yamawaki et al. (US 4,065,426) in view of JP 11-292978 A. Rejections based on the newly cited reference(s) follow.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 15, 16, and 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamawaki et al. (US 4,065,426) in view of JP 11-292978 A (see machine translation for citation).

**Regarding claims 15 and 16**, Yamawaki et al. discloses a natural rubber latex is added with a coagulant to obtain crumbs of the rubber (C2/L39-49). A rubber latex may be mixed with an aqueous carbon black slurry (C2/L64-C3/L4). Additionally, water-soluble polymeric materials such as polyethylenepolyamine, polyimine, polyacrylamide may be used as a coagulating assistant (C3/L21-37). In the fourth step (d), a spray dryer may be used (C5/L5-22). Since each of the components is mixed, some agitation must take place.

However, Yamawaki et al. does not disclose spray drying under an atmosphere of a shock wave generated from pulse combustion. JP '978 teaches pulse shock wave dryer of a resin powder in claim 1. JP'978 teaches the temperature is from 40-80 °C. Yamawaki et al. and JP '978 are analogous art concerned with the same field of endeavor, namely rubber crumbs with non-tackiness which may be spray dried. It would have been obvious to one of ordinary skill in the art at the time of invention to substitute the method of spray drying of Yamawaki et al. with the method as taught by JP '978, and the motivation to do so would have been as JP '978 suggests thermal energy is low temperature compared with conventional spray drying method and dessication and powdering of the rubber is efficient [0011].

**Regarding claim 21**, Yamawaki et al. discloses a rubber latex may be further mixed with an oil (C3/L5-17). Additionally, other additives such as zinc oxide, sulfur, an antioxidant, a cure accelerator may be added (C3/L18-20).

**Claims 17 and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamawaki et al. (US 4,065,426) in view of JP 11-292978 A (see machine translation for citation) as applied to claim 15 above, and further in view of Mowrey (US 6,512,039).

**Regarding claim 17**, modified Yamawaki et al. discloses a method as shown above in claim 1.

However, Yamawaki et al. does not disclose a water-soluble polymer is polyvinyl alcohol or cellulose derivative. Mowrey teaches polyvinyl alcohol may be added to a latex of a natural rubber (C4/L46-C5/L21, C10/L55-58). Yamawaki et al. and Mowrey are analogous art concerned with the same field of endeavor, namely curable chlorinated elastomers such as natural rubber. It would have been obvious to one of ordinary skill in the art at the time of invention to substitute a water-soluble polymer of modified Yamawaki et al. with one as taught by Mowrey, and the motivation to do so would have been as Mowrey suggests polyvinyl alcohol is a protective colloid for halogen-containing polymers such as chlorinated natural rubber.

**Regarding claim 18**, a water-soluble cellulose derivation is an optional water-soluble polymer of claim 17. Since modified Yamawaki et al. teaches a polyvinyl alcohol, the claimed limitations are met.

**Claims 17 and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamawaki et al. (US 4,065,426) in view of JP 11-292978 A (see machine translation for citation) as applied to claim 15 above, and further in view of Eck et al. (US 5,959,017). *This is an alternative rejection of claim(s) 17 and 18 above to meet the limitations of species of water soluble polymer.*

**Regarding claims 17 and 18**, modified Yamawaki et al. discloses a method as shown above in claim 1.

However, Yamawaki et al. does not disclose a cellulose derivative or polyvinyl alcohol. Eck et al. teaches as dispersants such as polyvinyl alcohol copolymers and cellulose polymers such as hydroxypropyl-cellulose s with a degree of substitution in the range from 1.5 to 3 (C4/L8-23). Some of the hydroxypropyl groups are etherified, therefore the amount of etherification would meet the claimed amount, absent objective to the contrary. Modified Yamawaki et al. and Eck et al. are analogous art concerned with the same field of endeavor, namely water dispersable polymer compositions, including natural rubber and drying the composition. It would have been obvious to one of ordinary skill in the art at the time of invention to add a cellulose polymer or polyvinyl alcohol as taught by Eck et al. in a composition of Yamawaki et al., and the motivation to do so would have been as Eck et al. suggests polyvinyl alcohols and cellulose are protective colloids.

**Claim 20** is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamawaki et al. (US 4,065,426) in view of JP 11-292978 A (see machine translation for citation) as applied to claim 15 above, and further in view of Chandran et al. (US 5,842,289).

**Regarding claim 20**, modified Yamawaki et al. discloses a method as shown above in claim 1.

However, modified Yamawaki et al. does not disclose frequency of pulse combustion. Chandran et al. teaches a frequency of pulse combustion in a range of from about 50 to about 500 Hz (C3/L12-19). Modified Yamawaki and Chandran et al. are concerned with the same technical difficulty, namely spray drying. It would have been obvious to one of ordinary skill in the art at the time of invention to try to use the frequency as taught by Chandran et al. in a process of modified Yamawaki which is a suitable range with a similar device.

#### ***Allowable Subject Matter***

**Claims 1-6, 8-13, and 23-26** are allowed.

**Claim 19** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the closest prior art of record, Yamawaki et al. (US 4,065,426) in view of JP 11-292978 A (see machine translation for citation) does not teach or suggest the specific viscosity of the polymer composition of claims 1 and 19.

***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NICOLE M. BUIE whose telephone number is (571)270-3879. The examiner can normally be reached on Monday-Thursday with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571)272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/N. M. B./  
Examiner, Art Unit 1796  
7/17/2009

/Marc S. Zimmer/

Primary Examiner, Art Unit 1796